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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,531	08/17/2001	Douglas W. Akers	B-124	4276

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EXAMINER

PALABRICA, RICARDO J

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 01/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,531

Applicant(s)

AKERS

Examiner

Rick Palabrica

Art Unit

3641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 18 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 8 and 20-36 is/are pending in the application.
- 4a) Of the above claim(s) 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 8 and 20-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Based on telephone interviews with the applicant's representative on 11/18/02 and 12/17/02, the finality of the 9/18/02 Office Action is withdrawn and replaced by this Office Action.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Specification

2. The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and as failing to adequately teach how to make and/or use the invention, i.e., failing to provide an enabling disclosure.

The claimed invention is an apparatus for non-destructive testing. However, there is no adequate or enabling disclosure of how such could be accomplished using the applicant's invention.

Art Unit: 3641

On page 8, the applicant discloses the application of normal activation/analysis and rapid activation/analysis processes and refers to Figs. 4 and 3, respectively. Claim 25 also recite a data processing system that includes normal activation/analysis and rapid activation/analysis algorithms. The disclosure is insufficient as what exactly is meant by "activation/analysis", i.e., does it mean activation only, analysis only or both activation and analysis"? Also, as presently set forth, these cited processes/algorithms are essentially "black boxes" with no description of the internals thereof. The disclosure is insufficient in failing to set forth in an adequate and sufficient fashion, a description of these algorithms that would enable it to perform its intended function. If the applicant is of the opinion that there is a description in the prior art (in the form of literature, etc. having a date prior to the filing date of this application) of the internals of this black box, copies of said literature, etc. must be submitted for appropriate review by the Office. See In re Ghiron et al., 169 USPQ 723, 727.

Activation/analysis

On page 10, lines 5+, the applicant discloses a step 53, labeled "sufficient data collected?" The disclosure is insufficient as what exactly are the criteria for determining whether the data collected is sufficient or still insufficient.

On pages 11, 28-30 the applicant discloses the use of algorithms of Doppler broadening, positron lifetime, 3-D imaging, and selective activation for the processing of data, and refers to the boxes in Fig. 6. These algorithms and their corresponding processors are also recited as part of claims 20-24, 26-30, 31-33, and 34-36. As presently set forth, these cited algorithms are essentially "black boxes" with no description of the internals thereof. The disclosure is insufficient in failing to set forth in

Art Unit: 3641

an adequate and sufficient fashion, a description of these algorithms that would enable it to perform its intended function. If the applicant is of the opinion that there is a description in the prior art (in the form of literature, etc. having a date prior to the filing date of this application) of the internals of this black box, copies of said literature, etc. must be submitted for appropriate review by the Office. See In re Ghiron et al., 169 USPQ 723, 727.

The applicant cites on page 28 a U.S. patent as reference for Doppler broadening algorithm and incorporates said patent in the application. Note that an algorithm for a particular application inherently requires constants and other application-specific parameter values to be successfully used. The disclosure is insufficient as to: 1) where exactly in the cited patent is the so-called algorithm; and b) what, if any, parts of this algorithm have to be modified to apply it to the claimed invention, i.e., which constants and which parameters?

The amended claims recite a limitation of "data indicative of a lattice characteristic of the specimen being tested" (e.g., see amended claim 1 and new claim 20). The disclosure is insufficient as to what exactly is meant by the term "lattice characteristic."

It is thus considered that the examiner (for the reasons given above) has set forth a reasonable and sufficient basis for challenging the adequacy of the disclosure. The statute requires the application itself to inform, not to direct others to find out for themselves; In re Gardner et al., 166 USPQ 138, In re Scarborough, 182 USPQ 298. Note that the disclosure must enable a person skilled in the art to practice the invention

Art Unit: 3641

without having to design structure not shown to be readily available in the art, In re Hirsch, 131 USPQ 198.

.Claim Rejections - 35 USC § 112

3. Claims 1-3, 5, 7, 8 and 20-36 are rejected under 35 U.S.C. 112, first paragraph, for the reasons set forth in the objection to the specification in section 2 above.

4. Claims 1-3, 5, 7, 8 and 20-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are vague, indefinite and incomplete.

Claims 1, 8, 20, 26, 31, 34 and 36 recite the limitation data indicative of a lattice characteristic. The term "lattice characteristic" is vague and undefined.

Claims 20, 26, 31, 34 and 36 recite limitations on any one of Doppler broadening, positron lifetime, three-dimensional imaging, and selective activation algorithms or processors for these algorithms. It is unclear what these algorithms and their corresponding processors encompass. See also the objection to the specification in section 2 above.

Claim 25 recites the limitations "normal activation/analysis algorithm" and "rapid activation/analysis algorithm". It is unclear what these terms encompass because they

Art Unit: 3641

are undefined. Also, the specification refers to "normal activation/analysis" and "rapid activation/analysis" as processes and not as algorithms.

5. Claims 1-3, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,175,756 to Pongratz et al (see Fig. 1 and corresponding parts of the specification). Pongratz et al. disclose a device for detecting nitrogenous, phosphoric, chloric and/or oxygenous substances inside an object, particularly of explosives or addictive substances in pieces of luggage. He discloses an electron accelerator (1) of variable energy that generates an electron beam (2) impinging on a heavy metal target (3), creating bremsstrahlung photons (4) to scan a test object. Said photons cause creation of positron emitters in said object if it contains substances such as nitrogen, chlorine or phosphorus (see column 3, lines 30-33). The detector is an Anger camera that is essentially a position-resolving detector system for the annihilation radiation occurring from positron annihilation. On the basis of coincidence measurements, a list of coincidence events is established which is converted in the computer (11) into a density distribution of the detected substance (see column 4, 2nd to last paragraph). The computer (11) controls the electron accelerator (1) to adjust the energy of the bremsstrahlung photons (see column 3, lines 25-28).

Applicant's claim language reads on Pongratz et al. 's invention as follows: a) "data processing system" reads on computer 11; b) "output data indicative of a lattice characteristic of the specimen being tested" reads on the data regarding the identification and density distribution of the substance detected. Note that the identity

Art Unit: 3641

and density of a substance (e.g., an impurity) present in a given specimen indicate certain characteristics of the lattice of that specimen.

Additionally, the clause, "producing output data indicative of a lattice characteristic of the specimen being tested" in claims 1 and 8 is essentially a method limitation or statement of intended or desired use. This clause, as well as other statements of intended use, do not serve to patently distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 152 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See also MPEP 2114 that states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531.

Apparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

6. Claims 1-3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,980,901 to Miller, who discloses an apparatus for detecting common explosive materials by measuring the relative concentration of nitrogen in an object (see Fig. 5 and corresponding parts of the specification). A source of electrons (54) is directed to a bremsstrahlung converter target (60). X-rays produced by said converter

Art Unit: 3641

target is directed to the object (50). The resultant production of annihilation photons from the nitrogen atoms in the object is detected by scintillation counters (66), and the signals from these counters are processed by a minicomputer (68) to provide an indication of the concentration of nitrogen in the object (see column 5, 3rd paragraph). An accelerator is one possible source of the electrons (see column 2, lines 39-41).

Applicant's claim language reads on Miller's invention as follows: a) "data processing system" reads on minicomputer 68; b) "output data indicative of a lattice characteristic of the specimen being tested" reads on the data regarding the concentration of nitrogen in an object. Note that the identity and concentration of an element, such as nitrogen, present in an object, indicate a certain characteristics of the lattice of that object.

See section 6 above regarding the clause, "producing output data indicative of a lattice characteristic of the specimen being tested" in claims 1 and 8.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3641

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Alex et al. Miller discloses the applicant's claim except of the use of a germanium detector. Miller uses scintillation detectors for detecting annihilation photons.

Alex et al. teach the use of a Ge(Li) detector for detecting gamma rays emitted by a specimen subjected to non-destructive examination by positron annihilation. One having ordinary skill in the art would have recognized that the methods of Miller and Alex et al. are based on the same positron annihilation techniques and that Ge(Li) detector can be used in place of a scintillation detector in detecting annihilation photons.

Therefore, it would have been obvious to one having ordinary skill of the art at the time the invention was made to modify the apparatus, as disclosed by Miller, by the teaching of Alex et al. to substitute a germanium detector for the scintillation detector, as this is no more than the utilization of conventionally known designs/techniques of nuclear instrumentation within the nuclear art, and the substitution of a detector by another well-known detector.

8. Claims 20, 21, 23, 24, 26, 27, 28 and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Pongratz or Miller in view of applicant's own admission of prior art in the specification on page 28 (on Doppler broadening algorithm), page 29 (positron lifetime algorithm), on page 30 (three dimensional imaging algorithm).

Art Unit: 3641

Claims 20, 26, 31, and 36 recite the use of a Doppler broadening algorithm in the data processing system. Claims 21, 27, 28, 33, 34 and 36 recite the use of a positron lifetime algorithm in the data processing system. Claims 32, 35, and 36 recite the use of a three-dimensional imaging algorithm in the data processing system. However, the admitted prior art indicates that the use of such algorithms is already known in the positron annihilation art. Therefore, the use of such well-known algorithms in either of the primary references is prima facie obvious.

As to the selective activation algorithm recited in claim 23, this is inherent in the primary reference because the system disclosed therein inherently selects the photons having specific energies to use for the detection process and data analysis.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 3641

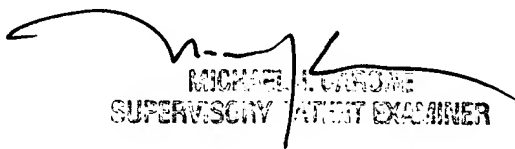
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 703-306-5756. The examiner can normally be reached on 7:00-4:30, Mon-Fri; 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703-306-4198. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

RJP
December 18, 2002



MICHAEL A. CARONE
SUPERVISORY PATENT EXAMINER